IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re:	Application of:	Werner KNEBEL et al.		
	Serial No.:	10/713,887	Confirmation No.:	1103
	Filed:	November 14, 2003		
	For:	SCANNING MICROSCOPE		
	Art Unit:	2872		
	Examiner:	Joshua L. Pritchett		
	Customer No.:	23280		

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 3, 2006

APPELLANTS' REPLY BRIEF UNDER 37 C.F.R. § 41.41

Sir:

Appellants submit this reply brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in response to the Examiner's Answer mailed August 3, 2006.

1. REAL PARTY IN INTEREST

The real party in interest is Leica Microsystems Heidelberg GmbH, now renamed Leica Microsystems CMS GmbH, a German corporation having its place of business in Mannheim, Germany, the assignee of the entire right, title and interest in the above-identified patent application. The invention was assigned by inventor Knebel and Storz to Microsystems Heidelberg GmbH, recorded on November 14, 2003 at reel 014710, frame 0835.

2. RELATED APPEALS AND INTERFERENCES

Appellants, their legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

3. STATUS OF CLAIMS

Claims 1-5 and 8-20 are pending. Claims 1-5 and 8-20 have been finally rejected as per the Final Office Action dated September 19, 2005.

The rejection to claims 1-5 and 8-20 thus is appealed. A copy of appealed claims 1-5 and 8-20 is attached hereto as Appendix A.

4. STATUS OF AMENDMENTS AFTER FINAL

No amendments were filed after the final rejection

5. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 recites a scanning microscope (e.g., Fig. 1; e.g., specification page 6, lines 4-10, respectively) having a detector (e.g., 29 or 33 in Fig. 1; e.g., specification

page 6, lines 12-14 or lines 17-21, respectively), arranged in a detection beam path (e.g., 27 in Fig. 1; e.g., specification page 6, lines 10-16), for receiving detection light (e.g., 27 in Fig. 1; e.g., specification page 6, lines 10-16) proceeding from a sample (e.g., 25 in Fig. 1; e.g., specification lines 8-10), a monitoring means (e.g., 43 in Fig. 1; e.g., specification page 6, line 27 – page 7, line 1) that measures the light power level of the detection light, and an optical shutter means (e.g., 35 or 37 in Fig. 1; e.g., specification page 6, lines 23-25) between the sample and the detector with which the detection beam path can be blocked based on the light power level of the detection light exceeding a definable threshold (e.g., specification page 7, lines 1-3).

Independent claim 12 recites a method for scanning a sample (e.g., 25 in Fig. 1; e.g., specification lines 8-10), comprising: providing a microscope having a detector (e.g., 29 or 33 in Fig. 1; e.g., specification page 6, lines 12-14 or lines 17-21, respectively) disposed in a detection beam path (e.g., 27 in Fig. 1; e.g., specification page 6, lines 10-16) and configured to receive detection light (e.g., 27 in Fig. 1; e.g., specification page 6, lines 10-16) proceeding from the sample; measuring the light power level of the detection light using a monitoring means (e.g., 43 in Fig. 1; e.g., specification page 6, line 27 – page 7, line 1); and blocking the detection beam path, when the light power level of the detection light exceeds a definable threshold (e.g., specification page 7, lines 1-3), using an optical shutter means (e.g., 35 or 37 in Fig. 1; e.g., specification page 6, lines 23-25) disposed between the sample and the detector.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 3-12 and 14-20 should be rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,065,008 issued to Hakamata et al. ("Hakamata et al."). Whether claims 2 and 13 should be rejected under 35 U.S.C. 103(a) as being unpatentable over Hakamata et al. in view of U.S. Patent No. 5,523,573 issued to Hänninen et al. ("Hänninen et al.").

7. ARGUMENTS

Rejection under 35 U.S.C. §102(b) to claims 1, 3-12 and 14-20 based on Hakamata et al:

Independent claim 1 of the present application recites "a monitoring means that measures the light power level of the detection light," and an optical shutter means with which the detection beam path can be blocked "based on the light power level of the detection light exceeding a definable threshold." Independent claim 12 of the present application recites "measuring the light power level of the detection light" and "blocking the detection beam path, when the light power level of the detection light exceeds a definable threshold, using an optical shutter means."

It is respectfully submitted that the anticipation rejection represents clear error because the cited prior art reference, Hakamata et al., fails to describe, expressly or inherently, every element as set forth in the claims. See MPEP 2131. Specifically, the cited prior art reference fails to teach the above-recited limitations of claims 1 and 12. Hakamata et al. does not control liquid crystal shutters 23a "based on the light power level of the detection light exceeding a definable threshold," as recited in claim 1, or use the shutters 23a for "blocking the detection beam path, when the light power level of the detection light exceeds a definable threshold," as recited in claim 12. Hakamata et al. does not control the shutters based on a light power level at all. In contrast Hakamata et al. explicitly teaches controlling the shutters in synchronization with a scanning operation based on a synchronization signal received from a control circuit 32. See Hakamata et al. col. 8, lines 29-39, and Fig. 1. Hakamata et al. describes a photodetector 25 having a receiving surface 25a upon which a laser beam 11' impinges after passing "through a liquid crystal shutter 23a, which has been set to the open state." See Hakamata et al., col. 7, lines 58-63. There is no disclosure in Hakamata et al. that any output, such as a power level of detected light, of photodetector 25 affects the liquid crystal shutters 23a in any way. Fig. 1 of Hakamata et al., which shows no signal output from photodetector 25 into control circuit 32, provides further substantiation that the shutters 23a are not operated based on the light power level of the detection light, as

required by claims 1 and 12. Because Hakamata et al. fails to teach the above limitations of independent claims 1 and 12, anticipation of these claims, or any of their dependent claims, has not been established.

Withdrawal of the rejection of claims 1, 3-12 and 14-20 under 35 U.S.C. §102(b) as being anticipated by Hakamata et al. is respectfully requested.

Rejection under 35 U.S.C. §103(a) to claims 2 and 13 based on Hänninen et al:

Hänninen et al. does not teach or suggest the features of claims 1 and 12 missing from Hakamata et al. (see argument above relative to the rejection under 35 U.S.C. §102(b) based on Hakamata et al.). Hänninen et al. merely describes a shutter S1 used to chop light in time-resolved methodology. See col. 8, lines 15-18, and Fig. 5. Therefore a combination of Hakamata et al. and Hänninen et al. could not teach or suggest all the features recited the dependent claims 2 and 13.

Withdrawal of the rejection of claims 2 and 13 under 35 U.S.C. §103(a) as obvious over Hakamata et al. in view of Hänninen et al. is respectfully requested.

8. RESPONSE TO EXAMINER'S ANSWER MAILED AUGUST 3, 2006

It is respectfully submitted that the liquid crystal shutters 23a of Hakamata et al. are not "operated based on the electronic detection of the control system," contrary to the Examiner's assertion. See Examiner's Answer mailed August 3, 2006, at page 7, lines 1-3. Hakamata et al. provides no disclosure that control circuit 32 receives any input from photodetector 25 via processing circuit 26 so as to somehow influence control circuit 32 to control the shutters 23a, as suggested by the Examiner. See Examiner's Answer at page 6, last four lines, through page 7, line 3. In contrast, Hakamata et al. merely indicates that a signal S generated by photodetector 25 is fed to signal processing circuit 26, which receives a synchronizing signal from control circuit 32 to output a picture element signal Sp. See

Hakamata et al., col. 8, lines 50-60. Thus, control circuit 26 provides an input *to* processing circuit 26; the control circuit does not receive any input *from* the processing circuit and photodetector 25, as suggested by the Examiner. See Hakamata et al., Fig. 1. The shutters 23a of Hakamata et al. are operated by control circuit 32 based on a synchronization with a scanning operation, not based on any detection light power level from photodetector 25 or from anywhere else. See Hakamata et al., col. 8, lines 29-39. Thus, it is respectfully submitted, Hakamata et al. does not teach operating the shutters 23a based on the light power level of detection light, as required by claims 1 and 12.

For the above reasons, it is respectfully submitted that the claimed invention is patentable over Hakamata et al.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance.

Favorable consideration of this reply brief is respectfully requested.

Respectfully submitted,

DARBY & DARBY, P.C.

Dated: Tuesday, October 03, 2006

Respectfully submitted,

By _____

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APPENDIX A

PENDING CLAIMS 1-5 and 8-20 OF
U.S. APPLICATION SERIAL NO. 10/713,887

Claim 1 (previously presented): A scanning microscope having a detector, arranged in a detection beam path, for receiving detection light proceeding from a sample, a monitoring means that measures the light power level of the detection light, and an optical shutter means between the sample and the detector with which the detection beam path can be blocked based on the light power level of the detection light exceeding a definable threshold.

Claim 2 (original): The scanning microscope as defined in Claim 1, wherein the detector is a non-descan detector.

Claim 3 (original): The scanning microscope as defined in Claim 1, wherein the detector is a descan detector.

Claim 4 (original): The scanning microscope as defined in Claim 1, further comprising a control means for controlling the shutter means.

Claim 5 (original): The scanning microscope as defined in Claim 1, wherein the detection beam path can be automatically opened up before the beginning of a scanning operation, and blocked at the end of the scanning operation.

Claims 6-7 (canceled)

Claim 8 (original): The scanning microscope as defined in Claim 4, wherein the control means extrapolates the future change over time in the detection light power level, and

wherein the detection beam path is automatically blockable when the light power level of the detection light is expected to exceed a definable threshold.

Claim 9 (original): The scanning microscope as defined in Claim 1, wherein the shutter means contains a mechanical shutter or an electrooptical element or acoustooptical element or LCD element.

Claim 10 (original): The scanning microscope as defined in Claim 1, wherein the detector contains a photodiode, in particular an avalanche photodiode, or a CCD element, in particular an EMCCD element, or a photomultiplier or photomultiplier array.

Claim 11 (original): The scanning microscope as defined in Claim 1, wherein the scanning microscope is a confocal scanning microscope.

Claim 12 (previously presented): A method for scanning a sample, comprising:
providing a microscope having a detector disposed in a detection beam path and configured to receive detection light proceeding from the sample;
measuring the light power level of the detection light using a monitoring means; and
blocking the detection beam path, when the light power level of the detection light exceeds a definable threshold, using an optical shutter means disposed between the sample and the detector.

Claim 13 (previously presented): The method as defined in Claim 12, wherein the detector is a non-descan detector.

Claim 14 (previously presented): The method as defined in Claim 12, wherein the detector is a descan detector.

Claim 15 (previously presented): The method as defined in Claim 12, further comprising controlling the shutter means using a control means.

Claim 16 (previously presented): The method as defined in Claim 12, further comprising automatically opening the detection beam path before the beginning of a scanning operation, and blocking the detection beam path at the end of the scanning operation.

Claim 17 (previously presented): The method as defined in Claim 15, further comprising extrapolating the future change over time in the detection light power level using the control means.

Claim 18 (previously presented): The method as defined in Claim 12, wherein the shutter means contains a mechanical shutter or an electrooptical element or acoustooptical element or LCD element.

Claim 19 previously presented): The method as defined in Claim 12, wherein the detector contains a photodiode, in particular an avalanche photodiode, or a CCD element, in particular an EMCCD element, or a photomultiplier or photomultiplier array.

Claim 20 (previously presented): The method as defined in Claim 12, wherein the scanning microscope is a confocal scanning microscope.

APPENDIX B

Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.

APPENDIX C

Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in "2. RELATED APPEALS AND INTERFERENCES" of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.